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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,654	10/26/2001	Hugh L. Brunk	P0483	1906

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DIGIMARC CORPORATION
9405 SW GEMINI DRIVE
BEAVERTON, OR 97008

EXAMINER

POWERS, WILLIAM S

ART UNIT PAPER NUMBER

2134

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/045,654

Applicant(s)

BRUNK ET AL.

Examiner

William S. Powers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/26/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

PD

DETAILED ACTION

1. Claims 1-16 have been examined.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: figure 1, reference number 110 and figure 5, reference number 38. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because figure 5 is not mentioned in paragraph 90 of the Detailed Description. It is mentioned in the Brief Description

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of the Figures. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:
 - a. The word "constant" (paragraph 30, line 4) should be changed to "constants" so that it agrees, in number, with the subject "weights" (paragraph 30, line 4).

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- b. The phrase "that a detect" (paragraph 78, line 1) should be deleted.
- c. The word "alternation" (paragraph 83, line 8) should be changed to "alteration".
- d. The phrase "detector 20" (paragraph 91, line 6) should be changed to "detector 32" to refer to the correct reference number.
- e. The word "fall" (paragraph 92, line 8) should be changed to "falls" so that there is subject-verb agreement.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "do not relate" in claim 3 is a relative term which renders the claim indefinite. The term "do not relate" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The embedding module disclosed in the claim deals with abstract matter and is not tangible.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1 and 4-14 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,064,764 to Bhaskaran et al. (hereto referred to as Bhaskaran).

As to claim 1, 11 and 12, Bhaskaran teaches decoding data from a watermarked image to extract 2 metrics:

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- a. A hash value of the watermarked image.
- b. A watermark computed from the hash value of the original image.

These metrics are compared to determine if the image has been altered (column 6, lines 17-58).

As to claim 4 and 5, Bhaskaran teaches that the watermark comprising a first and second metric (column 4, lines 11-15) is composed of a plurality of frequency coefficients that are quantized or averaged to minimize the distortion of the image.

As to claim 6, Bhaskaran teaches the use of entropy coding to determine the location of the coefficients that make up the embedded watermark in the watermarked image (column 6, lines 24-31).

As to claim 7, Bhaskaran teaches the evaluation of the highest frequency transform coefficient (peak) in each block to extract watermark data (column 3, lines 18-34).

As to claim 8, Bhaskaran teaches a photograph (column 8, lines 51-54).

As to claim 9, Bhaskaran teaches the use of a hash function as the first metric of the watermark (column 4, lines 11-17) which can be used to determine the energy level of the image to be watermarked.

As to claim 10, Bhaskaran teaches a watermark that is computed using a hash value of the image. The watermark is embedded in the image by an embedder. The hash value is used in the verification phase in comparison to the extracted watermark to determine if the watermarked image has been tampered (column 4, lines 10-62).

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As to claim 13 and 14, Bhaskaran teaches comparing the highest coefficients in the frequency domain of the digital watermark to determine if the image has been altered (column 3, lines 17-35).

8. Claims 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,330,672 to Shur.

As to claim 15, Shur teaches:

- a. Embedding a watermark into a digital data stream (column 6, lines 38-45).
- b. Rendering the watermarked digital data stream (column 6, lines 61-67).
- c. Detecting the watermark of the watermarked digital data stream (column 11, lines 12-24).
- d. Generating a metric based on the detected watermark (column 8, lines 56-62).
- e. Embedding said metric into data stream as part of the digital watermark (column 10, lines 1-11).

As to claim 16, Shur teaches the broadcasting of the digital data stream (column 6, lines 61-67).

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,064,764 to Bhaskaran et al in view of U.S. Patent No. 5,930,369 to Cox et al (hereto referred to as Cox).

As to claim 2, Bhaskaran teaches the use of a watermark to determine if an image has been subject to tampering (column 3, lines 18-35), but does not specifically disclose what comprises said tampering.

Cox teaches that by analyzing a watermark it can be determined whether or not a watermarked image has been compromised through printing, photocopying or scanning (column 13, lines 19-23).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Bhaskaran by including the ability to detect a watermarked image and determine that is compromised by printing, scanning or photocopying as disclosed by Cox.

As to claim 3 Bhaskaran further teaches decoding data from a watermarked image to extract a hash value of the watermarked image and a watermark computed from the hash value of the original image that are compared to determine if the image has been altered (column 6, lines 17-58).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,275,599 to Adler et al. teaches the use of domain frequency coefficients in digital watermarks.

U.S. Patent No. 6,487,301 to Zhao teaches determining the source of alterations to a watermarked image and a digital watermark made comprising two parts.

U.S. Patent No. 6,456,726 to Yu et al. teaches embedding a digital watermark, calibration signal and detecting alterations to a watermarked image.

U.S. Patent No. 6,359,998 to Cooklev teaches digital watermarks comprised of frequency coefficients.

U.S. Patent No. 6,704,431 to Ogawa et al. teaches the use of domain frequency coefficients and ratios in the use of digital watermarks.

U.S. Patent No. 6,246,777 to Agarwal et al. teaches the use of averages of the micro blocks in the determination of possible alterations of a watermarked image.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William S. Powers, whose telephone number

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is (571) 272-8573. The examiner can normally be reached Monday-Thursday from 8 AM – 4:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse, can be reached at (571) 272-3838.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
PO Box 1450
Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (886) 217-9197 (toll-free).


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ANDREW CALDWELL
SUPERVISORY PATENT EXAMINER